

new experiments, collected any new facts or formed
any new opinions on these subjects. Please communicate
we have a case that is coming before the Sup.
Court our sitting on this leave in a week or two
in wh. the latter of the above subjects is involved
& I am requested to give an opinion on court
I should be much obliged to you for any informa-
you may have relating to it



For Mr. Cleveland
Post. of Walth. St.
Boston
Massachusetts

29 Decr 1812 -
Prof. Farman
Falmouth, Me.

I have been struck with a most remarkable
error in Euclid on the flowing of rivers that
the velocity is proportional to the square root of
the ^{perpendicular} distance from the reservoir!! The whole ~~the~~
theory appears to be defective. Yours John L. L. L.

Cambridge Dec. 29. 1812

Science

My Dear Sir,

With regard to electrical bat-
teries you ^{know} that the form of the charged
electrics is not very material (Dr. Robinson
late of Edinburgh thinks the globe is prefera-
ble to any other & I do not know whose
opinion is worth more, also that the
fluid driven off from one side ~~may be~~
by the charge from the machine may be
made to charge a second electric, whether
jar or plate, & this a third & so on;
that in this way Dr. Franklin con-
structed a battery consisting of eleven
plates of lense dark glass which he
discharged all at once in the manner of our
common batteries by first interrupt-
ing the communication between negative
& positive & connecting all the posi-
tive surfaces together & all the negative
together. But it seems that this method

did not succeed very well I have never been
much misled because each successive jar
or plate as you depart from the man-
chine is charged somewhat more fully
than the preceding on account of the
resistance with ^{each} surface parts with
the resistance offered by the ^{imperfect} conducting substance
its place. But why plates may not be
used instead of jars & charged in the same
at way I cannot tell. With regard to plate
batteries I find nothing more than what is con-
tained in Priestley's History & Franklin's
letters above alluded to. ~~They are the gold coating~~
altho' we have beside Bevalle, Adams, Enghel-
Landers &c. &c. Mahon, Morgan, Nicholson &c. in
which I find nothing touching your difference
may not the gold coating be preferred on
account of the superior conducting property
of that metal to remedy in some degree the
defect mentioned above. Why may not an
electrical battery be constructed of plates
of glass cemented into a trough like our Sal-
vemi batteries & the overlying machine a large
electrodeous like Parker's, said to be equal to a bat-

tery itself. — New facts about a little salt upon
the limbs of a frog even after it has nearly lost
its galvanic ^{irritability} ~~susceptibility~~ contractions take place
without metal or contact of any kind. Frail
contractions may also be observed in the beef
of a Butcher's slaughter house that has not
been killed long. I recollect observing this
when a boy. The adhesion of Salvemi wires
sufficiently galvanized is very remarkable and
~~like~~ & vastly superior in degree to any
similar effect produced by electricity.
Have you ever observed how the magnetic needle
when enclosed in a box with a glass cover is disturb-
ed by a slight friction of the glass such ^{as} rub-
bing off the dust. If you have not you will find
it worthy of attention & that the neglecting of it
The electricity is easily removed by breathing upon it
may lead to an error of several degrees. Will
a needle unmagnetized be equally affected or a
wire of some other metal? If I mistake not the
needle is also disturbed by bringing a lighted
candle or lighted taper near it. — What do you
think now of the going of mills in the night &
of the stopping of a current of water above a fall
by an obstruction below. If you have made any